



*Michael C. Schlachter, CFA
Managing Director & Principal*

May 23, 2008

Ms. Anne Stausboll
Interim Chief Investment Officer
California Public Employees' Retirement System
400 P Street, Suite 3492
Sacramento, CA 95814

Re: Internal Passive Equity Portfolios Review

Dear Anne,

Wilshire has conducted a review of the Global Equity internal index team's personnel, investment process, and resources. This review was conducted as part of Wilshire's contractual requirement to periodically review all of the internal asset management functions, and included an on-site visit by me on May 13, 2008. Overall, we are pleased with the quality of the personnel, systems, and processes, and believe that the Investment Committee should continue to support this internal team.

The internal team currently manages several index portfolios benchmarked to a variety of indices. These portfolios include the PERS Custom 2500 index (a broad US portfolio), US microcap, US fundamental-based index, developed international equity, non-US fundamental-based index, REITs, emerging markets, and the Dynamic Completion Fund (DCF). All are managed by the same group of Staff, supervised by Eric Baggesen.

The DCF, fundamental index portfolios, and REIT index funds are managed as true index funds, with a bare minimum of tracking error relative to the benchmark. Historically, all have tracked their benchmarks within a very tight range. The PERS 2500, microcap, emerging markets, and developed international funds are managed with slightly wider controls, allowing Staff to add small amounts of value through superior trade timing around corporate actions and through the use of quantitative or other models that rank stocks and industries based on a variety of factors. These portfolios should not be thought of as "enhanced index" since their respective tracking errors are still extremely low (approximately 10 basis points in the case of the developed international equity portfolio, for example), but are measurably higher than would be the case for a traditional index fund.

Senior management within CalPERS believes that semi-enhanced management of these funds is appropriate given that Staff has historically added small amounts of value, a small amount of active management ability provides motivation and intellectual

stimulation for Staff, and these funds serve as an incubator for ideas that could be moved to either the internal enhanced equity portfolio or to a new developmental portfolio. Wilshire concurs with Staff that this freedom is generally a positive both to the team's continued development and the total fund, and also notes that any of these portfolios could be shifted to a low tracking error, index-tracking portfolio within CalPERS, or to an external manager, virtually overnight in the event of Staff departures or poor performance.

Review of Team

With more than \$100 billion in internally-managed index funds, CalPERS is one of the largest index managers in the world, surpassed by only a handful of money management organizations. Over the last several years, PERS has successfully constructed a team of seasoned professionals, mainly drawn from Barclays Global Investors and State Street Global Advisors, which is at least as experienced as any similar team at any external money manager. In fact, several members of this team were either portfolio managers or senior traders in BGI's and SSGA's index fund divisions before joining CalPERS. As assets have grown, the Global Equity SIO has been able to hire additional team members, and we believe that this team is sufficiently large and well-resourced to manage the assets with which it is charged.

In our opinion, the index team assembled at CalPERS should be able to handle any risk or complexity in the portfolio as well as any external manager CalPERS might consider.

As this team has grown, so too have the number of portfolios under internal management. Originally, when Eric Baggesen was first hired to build out CalPERS' internal management capacity, there were approximately four internal index funds. Today, there are at least 16 internally managed index funds, with a wide variety of target indexes. In our opinion, CalPERS is reaching the limit of how many funds can be managed internally given current Staff and technology resources. If the Investment Committee or CIO wishes to continue to expand internal management of equity assets, there are some significant technology issues that need to be addressed, discussed below, and CalPERS will likely need to add a few more members of Staff.

Review of Portfolio Management and Trading Systems

As the team has grown, technology resources have been added as well, including additional data vendors, order management systems, risk measurement platforms, and trade compliance tools. With the exception of two portfolios, all of the internal portfolios are managed under a common platform, and any member of the team can step in for another as required. The PERS 2500 and microcap portfolios are managed via a slightly different system, per the request of the portfolio manager, but could be shifted to the main portfolio trading system instantaneously if required.

We did learn that Staff has been having several issues with the existing technology platform which may hinder the ability of the portfolio management team to continue to add value or to expand the number of portfolios managed internally. The order management system was the only technology concern we discovered in our 2007 review, and we note that Staff has been having increasing difficulties with it over the last year. As the equity trading desk has expanded in personnel, assets, and sophistication, it has begun to stretch the limits of CalPERS' existing technology and databases. The current order management system (trading platform) has had increasing problems interfacing with CalPERS' central database, resulting in slower transmission speed of market orders and data. In addition, Staff has discovered a number of errors in daily pricing of unitized portfolios and in portfolio holdings. Part of this is a result of the fact that orders and transactions can be generated through several different systems and part results from the fact that the trading desk is employing State Street for activities which generally exceed the scope of a traditional monthly-valued custodian.

We recommend the following two solutions to these issues, in order to maximize CalPERS' market competitiveness. First, the CalPERS investment technology division should, in conjunction with Staff, review whether the current order management system / database combination is appropriate and sufficient for CalPERS' needs, or if other superior systems or databases exist. We believe that the current Charles River system is appropriate for use as a compliance monitoring system, given the amount of work that went into putting it in place, but there are other unified order management systems which may fit the trading desk's needs better. Alternatively, a database optimized for use by the trading desk may solve some of these issues. We note that the Global Fixed Income division has outsourced the portfolio management system to BlackRock, at considerable cost, and believe that the Global Equity group is equally deserving of a wide-open appraisal of their needs.

Second, Executive Office Staff is currently working with State Street to re-assess the level of service required by the trading desk and index team. State Street provides "back office" services to many large mutual fund companies, and is certainly capable as an organization of providing the daily valuation and reconciliation services that the Global Equity team requires. However, under the terms of the current State Street contract, CalPERS is limited to the use of more typical custodian services, rather than the kinds of services that an external money manager might employ. As the number of unitized funds and other portfolios continues to increase, the strain on the existing State Street relationship and resources will grow. If the above review of trading systems and databases results in a determination in continued use of State Street's services, some type of shift to the resources of State Street's funds management back office operation is in order.

Review of Compliance Process

Portfolio management Staff clear all trades through a compliance software package, and we have tested this system during past visits. We asked a portfolio manager to attempt to buy 1,000 shares of a stock currently on CalPERS' restricted list. Upon entry, the system informed us that this trade was in violation of CalPERS' policies and required clearance. The portfolio manager forced the trade into the system anyway, was blocked by the software from actually executing the trade, and promptly received a call from the Compliance Department inquiring why he was taking a prohibited action. Although no system can ever protect CalPERS fully against a malicious action by members of Staff, we are reasonably confident that the system in place will prevent unintentional or accidental compliance violations and would likely require significant collusion among a variety of members of Staff to execute trades against CalPERS' interest.

Conclusion

In brief, we believe that Staff has demonstrated the ability to implement the passive equity portfolios and to add small amounts of value versus select index funds. We are pleased with the experience of Staff and the technology resources at their disposal. We did not discover any significant adverse issues during our review, and are confident that CalPERS has sufficient resources to manage these portfolios as authorized by the Investment Committee.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Schlachter", with a long horizontal flourish extending to the right.

Michael C. Schlachter, CFA
Managing Director & Principal

Strategy Evaluation: CalPERS Internal Equity Index Funds

Organization (0-100)

SCORE:

COMMENTS:

Ownership/Incentives (0-30)
 Direct Ownership/Phantom Stock
 Profit Sharing
 Performance Bonus
 Depth of Incentives

Employees receive performance bonus only.

Score: 5

Team (0-25)
 Communication
Role of Manager, Research, and Operations
 Longevity of Team

Team currently is at maximum capacity given size of operation and portfolio. There are several portfolio managers/traders with different areas of primary responsibility, but all can exchange/cover other portfolios on a common platform. Team has been constructed over the last few years, but has excellent chemistry and appears to work together well.

Score: 18 (down from 20 due to capacity limits)

Quality of Key Professionals (0-15)
 Experience
 Quality of Leadership
 Quality of Education

Education and technical skill set of portfolio managers/traders and SIO-Global Equities are exceptionally good, by any standard. The portfolio managers/traders all have substantial experience with CalPERS or in similar capacities at external money managers. Leadership skill of SPM-Global Equities-Internal Assets is very good and his experience level is outstanding. Understands risks and issues to be monitored or resolved regarding strategy. Appropriately concerned about process, reporting, and monitoring.

Score: 15

Turnover of Senior Professionals (0-15)
 Low (<10%), Medium (<20%), High (>20%)

Staff turnover for CalPERS is high at both the senior and junior levels, including the departure of the SIO for Global Equities, the CIO, and the CEO over the last few months. We also note that the prior CIO departed approximately 3 years ago. Lack of long-term retention incentives lead some staff to consider the organization as a “stepping stone” to better compensation in similar positions elsewhere. Although turnover can be an organizational risk, it should not have a significant impact due to the passive (indexed) nature of these portfolios.

Score: 0 (down from 7)

Commitment to Improvement (0-15)
Clear Mission
Re-investment
Process Enhance

Score: 15

Strategy has clear mission and objectives. Resources are sufficient to the current tasks assigned to team, and support exists within the organization to add staff or other resources if strategy expands or other demands warrant.

Philosophy/Process (0-100)

SCORE:

COMMENTS:

Market Anomaly/Inefficiency (0-40)
Permanent or Temporary
Clear Identification
Where and How Add Value
Empirical or Academic Evidence to Support
Score: 40

These are passive portfolios that seek to track the index performance, and will not seek to add more than slight value.
Highest score given as these are generally passive portfolios that have met or exceeded their mandates. Future internally-managed active strategies that seek to exploit inefficiencies or information advantage may receive a different score.

Information (0-15)
Unique Sources, Unique Processing
Score: 15

Highest score given as these are generally passive portfolios that have met or exceeded their mandates. Future internally-managed active strategies that seek to exploit inefficiencies or information advantage may receive a different score.

Buy/Sell Discipline (0-15)
Disciplined/Structured Process
Quantitative and Qualitative Inputs
Score: 15

Highest score given as these are generally passive portfolios that have met or exceeded their mandates. Future internally-managed active strategies that seek to exploit inefficiencies or information advantage may receive a different score.

Portfolio Construction (0-15)
Benchmark Orientation
Risk Controls
Ongoing Monitoring
Score: 15

Quality Control (0-15)
Return Dispersion
Performance Attribution
Performance Consistency
Style Drift
Score: 15

Tracking error on all portfolios is reviewed monthly, and leeway is given to Staff to add modest amounts of value only if clear skill is demonstrated. Portfolios managed as pure index funds have had almost no tracking error.

Resources (0-100)

SCORE:

COMMENTS:

Research (Alpha Generation) (0-40)

Appropriate for Product Style
Conducted Internally/Externally
Quantitative/Qualitative
Sufficient Databases and Models for

Research

How are Research Capabilities Enhanced

Score: 40

These are passive portfolios, and Staff receives all data feeds that are required to maintain them in line with published indices. Small amounts of value may be added through the utilization of additional quantitative information from several investment banks.

Information/Systems Management (0-15)

Ability to Manage Large Flows of Data
Appropriate Systems for Research and
Management

Score: 10 (**down from 15**)

Staff has neared the capacity of the current technology platform, and has begun to complain of data accuracy and execution speed issues. A new IT resource was recently hired to alleviate these issues and Staff is currently exploring options regarding improvements to the back office services provider.

Marketing/Administration/Client Service (0-15)

Dedicated and Knowledgeable Group
Quality of Materials/Presentations of RFPs
Responsiveness
Measuring Client Satisfaction

Score: 14

Since marketing and client service are not involved, unlike external sources for such a strategy, full resources of portfolio managers will be devoted to CalPERS, as the portfolio managers will not have to travel to service other clients or market to prospects. End client (Investment Committee) has regular meetings that usually require SIO and some Senior Portfolio Managers, but team is able to continue to operate in their absence.

Trading (0-30)

Turnover Relative to Process
Sophistication of Trading Process
Measurement of Trading Costs
Soft Dollars in Client Interest

Score: 25

CalPERS' trading room is very sophisticated, was constructed in the last few years, and has subscriptions to all of the most popular trading data resources, i.e. Bloomberg, Instinet, ITG, WM, etc. Part of the underpinning of the value-added strategies lies in the trading, and there have been no significant trading issues that should impact the execution of the strategy. There is sufficient back-up and separation of responsibilities in the trading function.

Staff uses at least two systems for monitoring transactions costs, and scores well under both systems. Although there are no soft dollar arrangements, soft dollars are occasionally used to compensate external parties for services rendered to other areas within CalPERS.

Discussion

Wilshire's score on this strategy of 81% or 242 out of 300 possible points reflects the strong team and clear success demonstrated at managing the portfolio as charged. The main reasons for a less-than-perfect score overall are largely due to organizational-level issues such as senior management turnover and lack of retention incentives. The reduction from the 2007 score of 256 points (85%) is due to increased senior management turnover and growing concerns with the order management system.